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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/963,530      | 09/27/2001  | Yutaka Bannai        | NEC-469-US          | 9260             |

21254 7590 08/12/2005

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EXAMINER

CREPEAU, JONATHAN

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1746

DATE MAILED: 08/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/963,530

Applicant(s)

BANNAI ET AL.

Examiner

Jonathan S. Crepeau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-8,22-24 and 27-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24 and 27-32 is/are allowed.
- 6) ☒ Claim(s) 1,2,6-8,22 and 23 is/are rejected.
- 7) ☒ Claim(s) 3,4 and 33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action addresses claims 1-4, 6-8, 22-24, and 27-33. Claims 24 and 27-32 are allowed and claims 3 and 4 contain allowable subject matter. Claims 1, 2, 6-8, 22, and 23 remain rejected under 35 USC §102 and §103. Accordingly, this action is made final.

### ***Claim Objections***

2. Claim 33 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 32. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Claim Rejections - 35 USC § 102***

3. Claims 1, 2, and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 1-154462. The reference is directed to a secondary battery having an aromatic polymeric compound comprising boron as an electrode material. In a fully oxidized state, the compound comprises boron radicals (i.e., the third compound at the top of page 3). In a partially reduced/oxidized state, the material also comprises boron radicals (i.e., the second compound).

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Regarding claim 6, the bottom compound also represents a "starting state" of the compound.

Regarding claim 1, the compound would inherently have a spin concentration of  $10^{21}$  spins/g.

Thus, the instant claims are anticipated.

***Claim Rejections - 35 USC § 103***

4. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 1-154462.

The abstract of JP '462 does not specify which electrode comprises the boron-containing polymer, or the materials contained in the electrode of the opposite polarity.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the electrode materials recited in claims 22 and 23 are well-known, and advantageously used in, lithium batteries. In particular, transition metal oxides and carbonaceous materials are used in lithium batteries to obtain high voltage and safety characteristics. As such, these materials are not considered to distinguish over the reference. As a further note, if the boron-containing polymer of the reference is used in only one of the electrodes of the reference, such electrode would function as both a positive and negative electrode depending on whether the battery was being charged or discharged.

*Response to Arguments*

5. Applicant's arguments filed June 8, 2005 have been fully considered but they are not persuasive. Applicants urge that the claimed limitation relating to the spin concentration is not merely "inherent," as alleged by the Examiner. However, the Examiner points out the following factors which lead to a conclusion that the boron radicals of JP '462 inherently have a spin concentration within the claimed range. In the abstract, it is disclosed that "reversible, stable cation doping is made possible and deterioration in the atmosphere is prevented." Thus, the material of JP '462 is "stable," as are the claimed materials having the claimed spin concentration. Further, the material of JP '462 is structurally similar to the materials disclosed in the instant application having the claimed spin concentration. Both the prior art compound and the compounds of the instant application have a boron atom located adjacent an aromatic group. It is submitted that this structural similarity is sufficient to lead to a conclusion that the prior art compounds would have the claimed spin concentration. Once a reference teaching product appearing to be substantially identical is made the basis of a rejection, and the examiner presents evidence or reasoning tending to show inherency, the burden shifts to the application to show an unobvious difference (MPEP 2112). As such, the above rejections are still believed to be proper and are maintained herein.

***Conclusion***

6. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

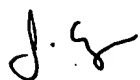
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr, can be reached at (571) 272-1414. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jonathan Crepeau  
Primary Examiner  
Art Unit 1746  
August 9, 2005